

Environmental Assessment
February 1999



Deep Ravine and Keogh/Crazy Horse Trails
LITTLE BIGHORN BATTLEFIELD

National Monument • Montana

Environmental Assessment

Deep Ravine and Keogh/Crazy Horse Trails **LITTLE BIGHORN BATTLEFIELD** National Monument • Montana

Summary

Deep Ravine and Keogh/Crazy Horse trails at Little Bighorn Battlefield National Monument are presently closed to the public. This environmental assessment analyzes alternatives to reopen these trails, in order to increase the diversity of visitor opportunities to the monument. Effects on archeological resources, cultural landscapes, and the historic trails were evaluated. Also evaluated were effects to soils, vegetation, wildlife, visual quality, ability to hear natural sounds, visitor experience, and socioeconomic resources.

This environmental assessment will be on public review for 30 days. Comments should be sent to:

Superintendent
Little Bighorn Battlefield National Monument
P.O. Box 39
Crow Agency, MT 59022-0039

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to Billings

Crow
Agency

Hospital

Fairgrounds

Gaming
casino

Entrance
station

Custer
National
Cemetery

visitor
center

Last Stand Hill

7th Cavalry
monument

212

to Busby

Chicago Burlington & Quincy R.R.

Ridge

Road Little

Bighorn

Garyowen

Reno-Benteen
Battlefield

River

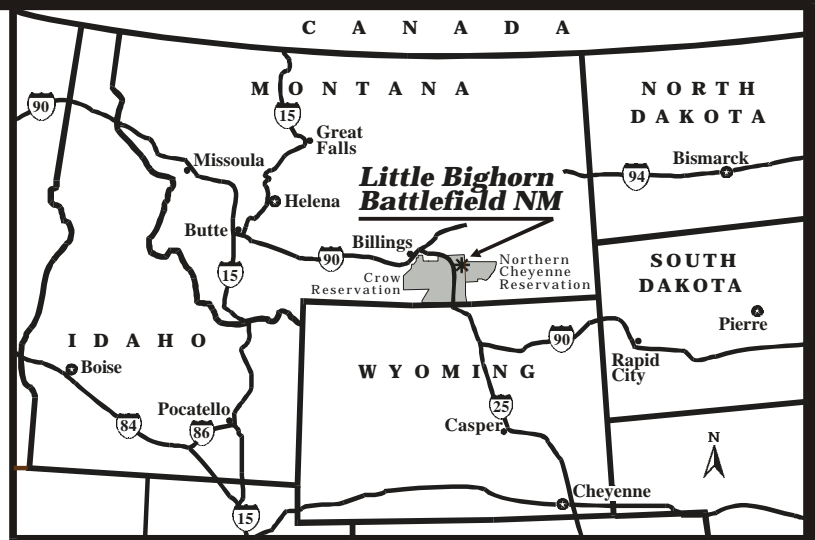
to Lodge Grass

Location

**Little Bighorn Battlefield
National Monument**

Bighorn County, Montana

381 | 80,066-A
1-99 | IMDE

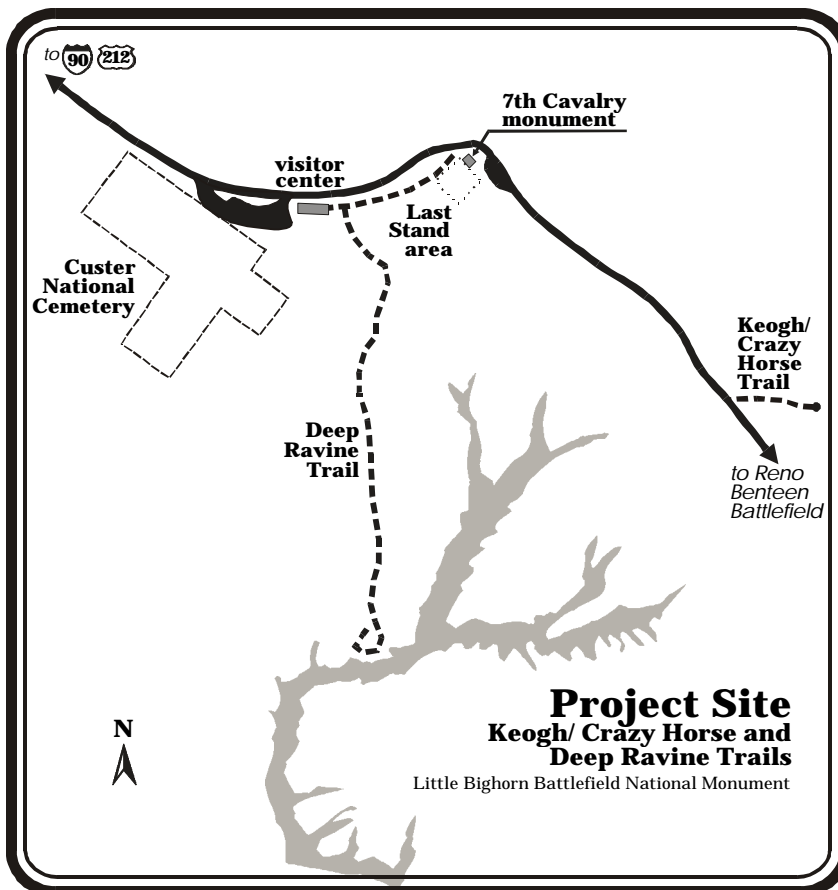


PURPOSE OF AND NEED FOR THE PLAN

NEED FOR THE PLAN

Little Bighorn Battlefield National Monument was officially recognized and designated a national cemetery under the headquarters of the Army in 1879. Subsequently, a boundary, the Reno-Benteen unit, and the erection of a public historic museum was authorized. In 1940 Custer Battlefield National Cemetery was transferred to the National Park Service, and in 1946, its name changed to Custer Battlefield National Monument. In 1991 the site was redesignated Little Bighorn Battlefield National Monument, and an Indian memorial to honor Native American participation in the battle was authorized.

The monument's most significant resource is the battlefield itself where on June 25, 1876, two culturally divergent forces clashed in a life and death struggle to on one hand, perpetuate national expansion, and on the other, to preserve a nomadic way of life. The park maintains a five-mile tour road connecting the Custer battlefield with the Reno-Benteen entrenchments. Currently, the park offers very little in the way of a battlefield experience. There are only two trails open, a half-mile concrete trail circumventing the Reno-Benteen perimeter and a 200-yard asphalt trail connecting the visitor center with Last Stand Hill and the Seventh Cavalry monument. Two historic foot trails were created just after the battle. These trails provided visitor access to two main areas of the Custer field: the 2000-foot Deep Ravine Trail begins at the visitor center and the Keogh/Crazy Horse Trail, a 200-yard trail that runs from Battlefield Road to the Keogh/Crazy Horse position and Crazy Horse breakthrough.



The Deep Ravine and Keogh/Crazy Horse trails traverse the battlefield's rolling hills covered with prairie grass. The compacted dirt trail surfaces are subject to erosion in places, and continued use resulted in trail widening to over 20 feet in some places. The trails were closed in 1991 because of resource damage concerns and a lack of ranger staff to adequately monitor trail use. Public reaction, to trail closure, for the most part, has been critical of NPS management policy. This environmental assessment (EA) analyzes a variety of options for reopening the trails and the effects on natural, cultural, and socioeconomic resources, and the visitor experience.

MISSION GOALS

Little Bighorn Battlefield National Monument preserves, protects, and interprets the historic, cultural, and natural resources, including lands, pertaining to the Battle of the Little Bighorn, leaving them unimpaired, and provides visitors with an understanding of the historic events leading up to the battle, the encounter itself, and the consequences by both the military and American Indian contingents, for the enjoyment of future generations.

Within that broad contextual framework, Little Bighorn Battlefield is committed to the following specific mission goals as defined in the park's 1999 Annual Performance Plan:

- Scenic, historic, cultural, and natural features of Little Bighorn Battlefield are preserved and protected.
- Historic, natural, and cultural sites in the park are managed within a broad context.
- Park visitors are satisfied with the quality of park facilities and services, and understand and support the preservation and significance of the park resources.

ALTERNATIVES

INTRODUCTION

A variety of trail surfaces, routes, and mitigating measures were considered as alternative methods to achieve the desired objective: provide for all weather seasonal use of the Deep Ravine and Keogh/Crazy Horse trails without unacceptable resource damage.

The existing 2,000-foot Deep Ravine and 660-foot Keogh/Crazy Horse trails date back to the foot paths developed in the 1890s by people going to the marble markers placed where soldiers fell during the battle. The Deep Ravine trail is compacted earth and half of the trail has sections where water pools after rain or snow. In these areas the trail widens from its 3- to 5-foot width to as much as 20 feet.

The compacted dirt Keogh/Crazy Horse trail provides access to Keogh markers and Crazy Horse's charge route, important parts of the interpretive story of the battle. The existing foot trail is compacted dirt traversing prairie grass and is 3 feet wide at maximum. Visitors park at the visitor center and access the trail along the top of Battlefield Road.

Both trails were closed in 1991 because of concerns about resource damage.

Surface treatments considered varied from placing wood chips, crushed rock, gravel, or other materials in the wet areas; hardening the entire trail with asphalt, concrete, or soil cement; or providing protective boardwalk along the trail route. Wood chips would not solve the wetness problem because they would be absorbed in the wet soil areas, tend to float away, need frequent replacement, and therefore may not solve the problem. Permanent hardening of the trail was rejected because of the amount of impact involved in preparing an adequate base on which to place the treatment, impacts from construction equipment, and the visual effect of the hardened surface. Providing raised boardwalk, although it would protect the existing trail and underlying archeological resources, would also be very visually intrusive on the cultural landscape and is cost-prohibitive (\$400,000). Table 1 describes the analysis process. Options were first evaluated for effectiveness; treatments that were ineffective were not considered further. Then options were evaluated based on amount of ground disturbance, visual effect, and cost.

Table: Analysis of Treatment Options

	Effectiveness	Construction Impacts	Visual Effect	Cost
Wood chips	-	+	+	+
Rock/gravel	+	+	-	+
Asphalt	+	-	-	-
Concrete	+	-	-	-
Soil Cement	+	+	-	?
Boardwalk	+	+	--	-

Negative effect = -

Positive effect = +

Uncertain = ?

Alternative A: No-Action (Existing Conditions)

Under the no-action alternative, the existing trails would be retained in their current historic alignments that follows the markers. The trails would remain closed for most of the visitor season, although they may be reopened for short terms on special occasions. Other special use would be authorized by permit. Total area affected is estimated to be 13,600 square feet.

Alternative B: Reopen Trail Seasonally

Under alternative B, the existing Deep Ravine and Keogh/Crazy Horse trails would be reopened to the public seasonally. In order to reduce trampling effects, parties would be kept small by not offering guided tours. More frequent ranger patrols would check the trails for erosion damage and the trails would be closed when wet. Wet areas would be graveled to confine visitors to the trails at those spots. Trail end points would be marked, and safety warnings would be posted along the trails where necessary. Special use would continue to be authorized by permit. Project cost is estimated to be \$2,000. Total area affected, once vegetation is reestablished, is estimated to be 12,000 square feet.

Alternative C: Develop All-Weather Trail

In order to minimize long-term resource damage, increase trail availability, and minimize maintenance activities, the Deep Ravine trail would be designed with an all-weather surface under alternative C. A crushed rock or gravel surface, mixed with fines to allow compaction, would be placed along the entire length of the trail. Some form of restraint would be used to keep the gravel confined to the path and prevent widening. Material native to the area would be used to provide a trail color that blends with the battlefield landscape. The trail would be a maximum of 5 feet wide (varying width might allow for pedestrians to pass and make the trail less visible) and would generally follow the existing route. Safety warning signs would be posted along the route where necessary. Minor realignments within the existing corridor would be made to the trail where markers are immediately adjacent to the trail; the trail would provide for photo opportunities without permitting direct physical access to the markers. A realignment or boardwalk would be developed at the beginning of the trail near the visitor center, and a trail terminus area would also be provided. A Deep Ravine overlook would be constructed near the visitor center to allow those visitors who cannot walk the trail to experience the resource. Cost is estimated at \$20,000 for the trail work and \$25,000 for the Deep Ravine overlook. Total area affected, once vegetation is reestablished, is estimated to be 12,000 square feet.

Alternative Considered But Eliminated From Detailed Evaluation

The Architectural Barriers, Rehabilitation, and Americans with Disabilities Acts require that programs and facilities be available to visitors with disabilities. The historic Deep Ravine and Keogh/Crazy Horse trail routes follow the existing topography, and some sections of the trails do not meet accessibility standards. Because of the trails' historic importance, the option of rerouting the trails to meet grade requirements was rejected. Instead, visitors with mobility impairments will be provided with a site bulletin or brochure explaining the trail and its relation to the battle. The Deep Ravine overlook will also allow those visitors to view the resource without hiking the trail.

ENVIRONMENTAL CONSEQUENCES

CULTURAL RESOURCES

Affected Environment

Three archeological sites have been identified within the national monument. These include two prehistoric sites (Calhoun Hill and Greasy Grass Ridge) on the Custer Battlefield, and one historic site related to the Battle of the Little Bighorn both the Custer and Reno-Benteen Battlefields. Extensive archeological surveys were conducted by the Midwest Archeological Center in 1984, 1985, and 1989. The 1984 archeological inventory covered each area with 2-meter-wide metal detector and visual techniques. Archeological materials, including some human remains associated with various markers, were identified, collected, and analyzed. The inventory demonstrated that additional artifacts and human bone are buried and not likely to be disturbed unless compaction and erosion occurs.

Consultation with Crow, Cheyenne, and Lakota tribes has begun in order to identify possible areas of ethnographic concern.

The Deep Ravine and Keogh/Crazy Horse Trail site archeological finds consisted of cultural material and human skeletal bone scatters that include metal and leather artifacts, and occasional human bone fragments relating to the June 25, 1876 Battle of the Little Bighorn. Limited testing at several Seventh Cavalry marker sites adjacent to the two trail impact areas were successful. To date, 37 of the 252 markers on the Custer Battlefield have been inventoried to test their historical accuracy. Continued testing of the remaining markers in the impact areas and throughout the Custer Battlefield is recommended. Remaining cultural or human skeletal bone material in the trail areas may occasionally appear as pockets of artifacts eroding out of sod tables or erosional remnants.

Little Bighorn Battlefield National Monument is listed on the National Register of Historic Places.

The earliest historic use of the Deep Ravine and Keogh/Crazy Horse trails began immediately after the Battle of the Little Bighorn in 1876 when Army personnel interred Seventh Cavalry battle casualties on the field and erected wooden stakes to mark each burial site. By 1879 heavy rains and erosion exposed many burials, prompting annual maintenance of the site and additional reinterments. In 1881 a granite memorial was erected on Last Stand Hill and human remains placed in a mass grave at the base. Use of the area increased by 1890 when white marble markers were erected at the original burial sites. By the early twentieth century, visitors to the area were attracted to the early army maintenance paths, leading to marker sites throughout the Custer Battlefield, with particular attention to the areas east and west of Last Stand Hill. The markers enabled visitors an opportunity to visualize and reconstruct Custer's Last Stand. This increase in visitor use created well defined trails, remnants which are still visible today.

After transfer of jurisdiction of Little Bighorn Battlefield to the National Park Service in 1940, the Deep Ravine and Keogh/Crazy Horse trails continued to be used by monument visitors. During the 1980s, a Deep Ravine trail guide was produced and numbered posts were installed along the unpaved trail in order to improve visitor understanding and appreciation of the historic battle. Visitor use of the Keogh/Crazy Horse trail continued but due to lack of parking at the trail head,

visitor use was not as pronounced as Deep Ravine Trail. The trails were closed to the public in 1990 to allow the areas to revegetate. The trails were opened up briefly in 1998 on two special occasions.

Impacts of Alternative A: No-Action

The Deep Ravine and Keogh/Crazy Horse Trail areas would continue to remain closed to the public. There would be minimal or no future effect from visitors to remaining archeological data.

Impacts of Alternative B: Reopen Trail Seasonally

Minimal impact to archeological resources would occur because the impact areas were extensively inventoried in 1984, 1985, and 1989. The trails would be realigned to minimize visitor impact at the Seventh Cavalry marker sites and allow for future archeological testing.

Impacts of Alternative C: Develop All-Weather Trail

An all-weather trail surface will also limit and minimize foot traffic and weather erosion of archeological material, including human remains. The proposed all weather trails and the associated restraints, if laid on the existing ground surface, would serve as additional protection for buried cultural material. The developed trail would also discourage visitors from trampling the areas around the markers, which causes additional erosion and compaction with the resultant exposure of artifacts and human remains.

SOILS AND VEGETATION

Affected Environment

Soils of Little Bighorn Battlefield National Monument range from deep to very shallow, and from clay to loamy fine sands. The features, such as steepness of slope, are more decisive in determining land classification and range sites than are the soil characteristics. The lower slopes and shales have deep soils, which are prone to both wind and water erosion.

Because the battlefield has been fenced since 1891, it is one of the most pristine grasslands in the region. Sagebrush and yucca is a dominant vegetation cover of the area; however, due to recent fires in 1983 and 1991 these species have become less dominant.

Bluebunch wheatgrass, Idaho fescue, Western wheatgrass, green needlegrass and blue grama are other main grasses. Much of the disturbance to vegetation and soil are from the battle, burial activities, and artifact hunters in succeeding years. The disturbed areas are evidenced by the invasion of Japanese brome, common salsify, prairie milkvetch, broom snakeweed and yellow clover.

There are no floodplains or wetlands in the project area.

Impacts of Alternative A: No-Action

The existing Deep Ravine and Keogh/Crazy Horse trails collect runoff, diverting it from natural drainages, increasing the local soil moisture regime. The increased runoff results in localized increases in erosion and changes in soil nutrient transport. Altered vegetative composition creates slight changes in soil chemistry. Past use of the trails affected the area by foot traffic. The primary impact on soils was compaction, which decreased permeability, locally altering the soil moisture and diminishing the water storage capability. This resulted in slower rates of water transmission within soils and increased runoff on the surface, increasing soil erosion. Prolonged trampling gradually decreased vegetation and increased exposure of bare ground to the direct erosive impact of rainfall. Erosion took the form of channelization on barren areas of even slight slope.

Impacts of Alternative B: Reopen Trail Seasonally

Reopening the trails to visitor use would expose the trail surfaces to increased opportunity for erosion. Foot traffic would cause soil compaction and change the amount of moisture available to plants, which in turn would alter the relative abundance of some species. Plants that invade disturbed areas would become more common. Increased erosion would lead to exposure of root systems and the subsequent death of more mesic plants. Germination of some plant species may be inhibited by soil compaction resulting from foot traffic. The impacts of trampling would range from complete exclusion of vegetation to slight shifts in species composition. In this grassland, the proportion of annuals and quick-spreading perennials would increase. Monitoring of trail conditions and closing the area when wet would reduce these effects, and the placement of gravel in wet areas would also reduce the effects of foot traffic.

Impacts of Alternative C: Develop All-Weather Trail

Implementation of this proposal would expand visitor experience and understanding while limiting and minimizing soil damage. Seasonal use would decrease long-term wear and tear of the trail and would aid in improving resource protection of the area. Placement of gravel would permanently exclude vegetation but the improved surface should reduce visitor trampling off trail, thus lessening trail widening and decreasing the area affected by foot traffic.

WILDLIFE

Affected Environment

Mammals, such as whitetail deer, cottontail rabbits, porcupines, skunks, badgers, coyotes, and foxes are represented in the area. Rattlesnakes and bullsnakes represent 95 percent of the reptile populations; bullsnakes alone account for about three-fourths of all sightings. Birds frequently seen within the area are western meadowlarks, robins, sparrows, sharptail grouse, and magpies. Field mice are also prevalent. There are no threatened or endangered species in the project area.

Impacts of Alternative A: No-Action

No impact will occur. Most wildlife do not regularly use the impact area when the trails are in use. Wildlife is seen occupying impact areas either at night or in the early morning hours before sunrise.

Impacts of Alternative B: Reopen Trail Seasonally

Minimal impacts are expected due to insignificant usage by wildlife of the proposed areas, primarily because areas are a low food source area for most wildlife. Seasonal use will also limit and allow for revegetation, which will serve to benefit wildlife needs if any. A high wildlife impact may affect snakes since they are a predominant population, which brings up a higher risk of for safety concerns for both snakes and people. Past experience with trail use does not reflect significant contact with snakes, but use will increase the possibility of safety concerns.

Impacts of Alternative C: Develop All-Weather Trail

Implementation of the proposal will be similar to alternative B. A semi-permanent trail should have limited, if not any impact to wildlife. This alternative may have a positive benefit to wildlife due to the fact that visitors will have a defined trail, which will discourage wandering off-trail and minimize contact with wildlife.

VISUAL QUALITY

Affected Environment

Visual quality or scenery of the park is essential to the establishment and purpose of the site. The historic trails are already a part of the historic landscape. The existing trail is not visually intrusive primarily because it has been a part of the landscape since shortly after the battle and is a historic trail. The trail alignment is visible only in some areas from Last Stand Hill, the primary visitor use area of the park. Through previous trail closures, natural revegetation has improved the visual appearance of the trail.

Impacts of Alternative A: No-Action

Trail closure would ensure that the trails remain mostly unaffected, reducing visual quality effects.

Impacts of Alternative B: Reopen Trail Seasonally

Visual quality may be adversely affected when viewed from a vantage point outside and away from the trails. Increased trail use may result in erosion and vegetation trampling, increasing the trail footprint when viewed from other vantage points. The presence of visitors on the trails may detract from visitor appreciation of how the events may have taken place.

Impacts of Alternative C: Develop All-Weather Trail

Impacts would be the same as described for alternative B with the exception that a pronounced man-made re-enforced trail will, on the one hand, visually intrude on the natural setting. On the other hand, by establishing a defined delineated trail and lessening the number and width of social trails, visual impacts will be kept to a minimal over the long term.

ABILITY TO HEAR NATURAL SOUNDS

Affected Environment

The ability to hear natural sounds is important to the feeling and understanding of the battlefield. Natural wildlife sounds are minimal since minimal wildlife use is experienced. From an interpretive perspective, the natural tranquility adds to the visitor experience and understanding. Adjacent roads and park headquarters are far enough away from the central area of the trail to minimally alter natural sound levels. The park has never used noise monitoring equipment to measure ambient sound levels.

Impacts of Alternative A: No-Action

No action would continue to have minimal impacts from current social trail usage. As visitation increases annually relative increases can be expected on the trails.

Impacts of Alternative B: Reopen Trail Seasonally

Minimal impact will occur. Social trails will continue to have disturbed natural sounds from usage. Opening the trails would allow staff to monitor quietness and enforce if necessary.

Impacts of Alternative C: Develop All-Weather Trail

The proposed alternative may increase natural sounds due to material used for establishing an all-weather trail. An all-weather trail could increase the number of visitors on the trail. An established trail would enable staff to monitor natural sound and enforce acceptable natural sounds as necessary.

VISITOR EXPERIENCE

Affected Environment

Total monument visitation in 1998 was 370,045. Many monument visitors are traveling to and from other national parks farther west, although the monument is the destination of "Custer buffs," Native Americans, and history enthusiasts. Most visitors to the monument are family groups. The average length of stay is about one hour, and visitation peaks from June through August. Fall visitation accounts for 15 percent, winter for 1 percent, and spring for 12 percent.

Little Bighorn Battlefield is a special place, largely unchanged, allowing profound personal reflection on the historic Battle of the Little Bighorn, and the American consciousness. The rugged high plains prairie of the Custer Battlefield has been fenced off to grazing since 1891. It is

one of the few areas in the region where the original grasses, plants, birds and animal life remain largely undisturbed, much as they appeared during the historic battle on June 25, 1876. Visitors are also attracted to the historic Seventh Cavalry marble markers scattered over the battlefield, which serve as poignant reminders of the life and death struggle that occurred over this hallowed ground. Access to these tranquil and remote areas and former battle positions is an important part of the visitor experience.

Impacts of Alternative A: No-Action

Visitor understanding and appreciation of the park resource and story would be affected. Visitors could not visit the remote and rugged battle related sites, nor comprehend the effects that the high plains terrain had on the outcome of the battle. The historic marker sites along the trail systems would have to be viewed from large distances, and the visitor experience would be limited to the congested improved sidewalks, battlefield road, and accessible areas of the monument.

Impacts of Alternative B: Reopen Trail Seasonally

The existing trails are convenient and accessible from the visitor center. Reopening the trail would expand availability of resources to park visitors, providing a broader diversity of opportunities. Visitor understanding and appreciation of the park resource and story will be enhanced as visitors have access to these two remote sites. Visitors will be able to experience the pristine and tranquil high plains environment, which has been fenced off since 1891. These trails provide a unique perspective of the battle from the Native American viewpoint, a perspective not represented at other visitor use sites. Providing these additional experiences could increase congestion in the parking lots, because the visitor's length of stay would increase, increasing the amount of time the parking space is filled.

Impacts of Alternative C: Develop All-Weather Trail

This proposal would create an improved all-weather trail surface, increasing visitor safety and accessibility. Visitors would have more opportunities to access the trail system during periods of extreme weather and experience the remote and tranquil areas leading down to the historic Deep Ravine and the final phase of the battle. These trails provide a unique perspective of the battle from the Native American viewpoint, a perspective not represented at other visitor use sites. The trail gives the visitor the opportunity to view the battle ridge as the Sioux and Cheyenne warriors witnessed it. Providing these additional experiences could increase congestion in the parking lots, because the visitor's length of stay would increase, increasing the amount of time the parking space is filled. Visitors may be frustrated by their inability to find a parking space, and illegal parking may increase. Hardening the surface would make it easier for visitors to spot snakes on the trail and lessen their chance of being surprised.

SOCIOECONOMIC RESOURCES

Affected Environment

Crow Tribe reservation lands surround the monument, and the Crow Reservation is one of seven Indian reservations in the state. The reservation, situated largely within Big Horn County with a portion in the southeast corner of Yellowstone County, covers 2.27 million acres and has a population of about 7,000. The city of Hardin, 15 miles northwest of the

monument, is the largest commercial and residential center in the county. The comprehensive plan for the city and county describes a basic two-fold future economy—production of power and tourism. A third sector, agriculture, is expected to fall to third place in rank of importance.

Book and gift sales at Little Bighorn Battlefield NM are offered through the Southwest Parks and Monuments Association. No other concession services are available in the monument, although there are a convenience store, café, gas station, and gift shops immediately adjacent to the park entrance.

Impacts of Alternative A: No-Action

No effects to socioeconomic resources would occur under the no-action alternative.

Impacts of Alternative B: Reopen Trail Seasonally

Minor benefits would accrue to the local community through purchase of construction materials.

Impacts of Alternative C: Develop All-Weather Trail

Minor benefits would be gained by the local community through purchase of construction materials. The site bulletin or trail guide would be offered as a sales item by the monument association, thus providing a modest opportunity for profit.

CUMULATIVE EFFECTS

Other projects envisioned for the battlefield include the construction of the Indian Memorial near Last Stand Hill in 2000 and the possible expansion of restroom facilities. These projects would be sequenced to avoid potential cumulative effects on visitors. None of the alternatives, in combination with this and other activities occurring at the battlefield, will result in any cumulative effects. Effects are minor and impacts are not controversial.

CONSULTATION/COORDINATION

The following agencies and organizations were contacted during preparation of this environmental assessment:

Montana State Historic Preservation Office
U.S. Fish and Wildlife Service

PREPARERS/REFERENCES

PREPARERS

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Chris Turk, Regional Environmental Quality Officer, Intermountain Support Office-Denver

REFERENCES

NATIONAL PARK SERVICE, U.S. DEPARTMENT OF INTERIOR

- 1998 "1999 Annual Performance Plan, Little Bighorn Battlefield NM." Little Bighorn Battlefield NM, Crow Agency, Montana.
- 1995 *Final General Management and Development Concept Plans, Little Bighorn Battlefield National Monument.* Rocky Mountain Region, Denver, CO.
- 1991 "Draft Resource Management Plan, Little Bighorn Battlefield NM," Crow Agency, Montana
- 1989 "Archaeological Perspective On The Battle of The Little Bighorn," Douglas D. Scott, Richard A. Fox, Jr., et al, University of Oklahoma Press, Norman, Oklahoma
- 1987 "Archaeological Insights Into the Custer Battle," Douglas D. Scott, and Richard A. Fox, Jr., University of Oklahoma, Norman, Oklahoma
- 1967 *History of Custer Battlefield,* Custer Battlefield Historical & Museum Association, Crow Agency, Montana